ABSTRACT

In one aspect of the invention, a method to construct a synthetic "gene" composed of linked synthetic Tag gene sequences is provided. In one embodiment, the genes, about 500 to 4000 base pairs long, are made by annealing and extending overlapping 60mer oligonucleotides followed by cloning into a plasmid vector. Both poly(A)-tailed sense (Tag) RNA and antisense (Tag Probe) RNA can be produced from the clones by in-vitro transcription. In another embodiment, the genes can be used as exogenous spikes for any sample. In another aspect of the invention, these synthetic gene spikes can serve as normalization controls in gene expression monitoring experiments and can also be used to assess system specificity, sensitivity, and dynamic range. These synthetic Tag genes are thus useful in assay development, in product development and validation, and for quality control.